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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/963,625	09/27/2001	Yar-Ming Wang	GP-301034	9716

7590 03/14/2003

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EXAMINER	
WONG, EDNA	

ART UNIT	PAPER NUMBER
1753	

9

DATE MAILED: 03/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 07-01)

Office Action Summary	Application No. 09/963,625	Applicant(s) WANG ET AL.
	Examiner Edna Wong	Art Unit 1753

-- The MAILING DATE of this communication app ars on the cov r she t with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-7 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-7 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on February 24, 2003 has been entered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

I. Claims **1 and 2** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Korte** (US Patent No. 6,309,427) in combination with **Gillich** (US Patent No. 5,760,981).

Korte teaches a method of forming a colored bright anodized coating on a surface of an aluminum alloy article, wherein said alloy contains more than three percent by weight magnesium (= ≤ 6 percent by weight) [col. 5, lines 55-65], said method comprising the steps of:

(a) anodizing said surface in an aqueous sulfuric acid bath at a temperature (= 5

to 50 °C) and a current density (= 0.3 to 5 A/dm^2) that produces a desired thickness (= 2 to 35 μm) of an anodized layer suitable for color finishing (col. 5, line 66 to col. 6, line 49); and

(b) coloring (= dyeing) said anodized layer to produce said colored coating (col. 7, lines 1-47).

The anodizing is conducted at said temperature that is in the range of 18 to 25 °C (= 5 to 50 °C) [col. 6, lines 18-20].

Korte does not teach wherein the aqueous sulfuric acid bath contains 100-200 grams of sulfuric acid per liter of bath; wherein the anodized layer is clear; and wherein said anodizing is conducted at said current density that is in the range of about 3 A/ft^2 to no more than 10 A/ft.

However, the invention as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made because one skilled in the art would have been motivated to have modified the method of Korte with wherein the aqueous sulfuric acid bath contains 100-200 grams of sulfuric acid per liter of bath because anodizing an aluminum surface in a sulfuric acid electrolyte is a well-known process for improving the corrosion resistance of aluminum. Aqueous electrolytes from 1%-70% sulfuric acid concentrations have been used, and a concentration of about 15% is presently the most frequently used level of sulfuric acid concentration for clear,

colorless anodic oxide coatings.

Korte teaches that the anodic oxidation of the aluminum or of the aluminum alloy for passivation and formation of a porous layer can take place in accordance with known methods, using direct and/or alternating current, and using electrolyte baths such as sulfuric acid. Such an anodizing technique is known in the art as DS process (direct current, sulfuric acid) [col. 5, line 66 to col. 6, line 18].

In the DS process (direct current, sulfuric acid), the concentration of sulfuric acid is normally 20%. The layers obtained this way are clear to yellowish as taught by Gillich (col. 1, line 66 to col. 2, line 29).

The concentration of sulfuric acid is a result-effective variable and one skilled in the art has the skill to calculate the concentration that would determine the success of the desired reaction to occur, e.g., to produce a clear, colorless anodic oxide coating, absent evidence to the contrary. MPEP § 2141.03 and § 2144.05(b).

As to wherein the anodized layer is clear, it appears that the DS process disclosed by Korte would have produced an anodized layer that is clear because the DS process produces such a layer as taught by Gillich (col. 1, line 66 to col. 2, line 29).

As to wherein said anodizing is conducted at said current density that is in the range of about 3 A/ft^2 to no more than 10 A/ft, Korte teaches an anodizing current density of 0.3 to 5 A/dm^2 (col. 6, lines 18-30) and Gillich teaches an anodizing current

density of up to 1 to 3 A/dm^2 (col. 2, lines 5-8). The anodizing current density is a result-effective variable and one skilled in the art has the skill to calculate the current density that would determine the success of the desired reaction to occur, e.g., to produce a clear, colorless anodic oxide coating, absent evidence to the contrary. MPEP § 2141.03 and § 2144.05(b).

II. Claims **3 and 4** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Korte** (US Patent No. 6,309,427) in combination with **Gillich** (US Patent No. 5,760,981) as applied to claims 1 and 2 above, and further in view of **Askin et al.** (US Patent No. 5,616,231) and **Komatsubara et al.** (US Patent No. 5,181,969).

The Korte combination is as applied above and incorporated herein.

Korte does not teach conducting prior to said anodizing step, immersing said surface to be anodized in an aqueous acid solution at a temperature below about 100°F, said solution comprising one or more mineral acids selected from the group consisting of, by weight, ten to twenty percent sulfuric acid, ten to thirty percent nitric acid, and forty to eighty percent phosphoric acid until the magnesium content in said surface is reduced to less than three percent and to produce a glossy surface; and further comprising, during said immersing step, establishing said surface as an anode in a direct current circuit with said solution as an electrolyte and applying a direct current voltage of 10 to 25 volts to said surface.

However, the invention as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made because one skilled in the art would have been motivated to have modified the method of Korte by conducting prior to said anodizing step, immersing said surface to be anodized in an aqueous acid solution at a temperature below about 100°F, said solution comprising one or more mineral acids selected from the group consisting of, by weight, ten to twenty percent sulfuric acid, ten to thirty percent nitric acid, and forty to eighty percent phosphoric acid until the magnesium content in said surface is reduced to less than three percent and to produce a glossy surface; and further comprising, during said immersing step, establishing said surface as an anode in a direct current circuit with said solution as an electrolyte and applying a direct current voltage of 10 to 25 volts to said surface because immersing the surface to be anodized in an aqueous acid solution at a temperature below about 100°F (= 90°-150°F), said solution comprising ten to twenty percent sulfuric acid (= 8-15 vol%) and forty to eighty percent phosphoric acid (= 50-70 vol%) and establishing said surface as an anode in a direct current circuit with said solution as an electrolyte and applying a direct current voltage of 10 to 25 volts (= between 5 and 50 volts) to said surface is a known surface treatment (electropolishing) for aluminum alloy as taught by Askin (col. 2, line 52 to col. 3, line 16). One would have electropolished an aluminum alloy article to produce a bright (= glossy) surface which would have naturally reduced the magnesium content in said surface.

As to less than three percent, limiting the Mg content to 2.0 to 8.0% magnesium

is effective in improving superplastic forming behavior by promoting dynamic recrystallization. It is also effective in improving the strength and superplasticity of aluminum alloy materials both before and after anodization without adversely affecting the corrosion resistance and weldability thereof as taught by Komatsubara (col. 3, lines 41-56).

III. Claim **5** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Korte** (US Patent No. 6,309,427) in combination with **Gillich** (US Patent No. 5,760,981).

Korte teaches a method of making a body component for an automotive vehicle, said component comprising an aluminum alloy containing more than about four percent by weight magnesium (= ≤ 6 percent by weight) [col. 5, lines 55-65], said method comprising the steps of:

(a) providing a body component having a surface requiring a decorative finish (col. 1, lines 5-18);

(b) anodizing said surface in an aqueous sulfuric acid bath at a temperature in the range of about 18 to 25°C (= 5 to 50 °C) and at a current density to form a coating of aluminum oxide having a thickness of about 10 to 25 micrometers (= 2 to 35 μm) [col. 5, line 66 to col. 6, line 49]; and

(c) coloring (= dyeing) said coating of aluminum oxide to produce said decorative finish (col. 7, lines 1-47).

Korte does not teach wherein the component is formed from a sheet; wherein the aqueous sulfuric acid bath contains 100-200 grams of sulfuric acid; wherein the anodized layer is clear; and wherein said current density that is in the range of about 3 A/ft^2 to no more than 10 A/ft of said surface.

However, the invention as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made because one skilled in the art would have been motivated to have modified the method of Korte with wherein the component is formed from a sheet because Korte teaches that structures, articles or parts made of aluminum or aluminum alloys are provided with a protective oxide layer (col. 1, lines 5-18). It is deemed to be common in the art to form structures, articles or parts by shaping a sheet of material.

As to wherein the aqueous sulfuric acid bath contains 100-200 grams of sulfuric acid, anodizing an aluminum surface in a sulfuric acid electrolyte is a well-known process for improving the corrosion resistance of aluminum. Aqueous electrolytes from 1%-70% sulfuric acid concentrations have been used, and a concentration of about 15% is presently the most frequently used level of sulfuric acid concentration for clear, colorless anodic oxide coatings.

Korte teaches that the anodic oxidation of the aluminum or of the aluminum alloy for passivation and formation of a porous layer can take place in accordance with

known methods, using direct and/or alternating current, and using electrolyte baths such as sulfuric acid. Such an anodizing technique is known in the art as DS process (direct current, sulfuric acid) [col. 5, line 66 to col. 6, line 18].

In the DS process (direct current, sulfuric acid), the concentration of sulfuric acid is normally 20%. The layers obtained this way are clear to yellowish as taught by Gillich (col. 1, line 66 to col. 2, line 29).

The concentration of sulfuric acid is a result-effective variable and one skilled in the art has the skill to calculate the concentration that would determine the success of the desired reaction to occur, e.g., to produce a clear, colorless anodic oxide coating, absent evidence to the contrary. MPEP § 2141.03 and § 2144.05(b).

As to wherein the anodized layer is clear, it appears that the DS process disclosed by Korte would have produced an anodized layer that is clear because the DS process produces such as taught by Gillich (col. 1, line 66 to col. 2, line 29).

As to wherein said current density that is in the range of about 3 A/ft^2 to no more than 10 A/ft of said surface, Korte teaches an anodizing current density of 0.3 to 5 A/dm^2 (col. 6, lines 18-30) and Gillich teaches an anodizing current density of up to 1 to 3 A/dm^2 (col. 2, lines 5-8). The anodizing current density is a result-effective variable and one skilled in the art has the skill to calculate the current density that would determine the success of the desired reaction to occur, e.g., to produce a clear,

colorless anodic oxide coating, absent evidence to the contrary. MPEP § 2141.03 and § 2144.05(b).

IV. Claims **6 and 7** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Korte** (US Patent No. 6,309,427) in combination with **Gillich** (US Patent No. 5,760,981) as applied to claim 5 above, and further in view of **Askin et al.** (US Patent No. 5,616,231) and **Komatsubara et al.** (US Patent No. 5,181,969).

The Korte combination is as applied above and incorporated herein.

Korte does not teach conducting prior to said anodizing step, immersing said surface to be anodized in an aqueous acid solution at a temperature below about 100°F, said solution comprising one or more mineral acids selected from the group consisting of, by weight, ten to twenty percent sulfuric acid, ten to thirty percent nitric acid, and forty to eighty percent phosphoric acid until the magnesium content in said surface is reduced to less than three percent and to produce a glossy surface; and further comprising, during said immersing step, establishing said surface as an anode in a direct current circuit with said solution as an electrolyte and applying a direct current voltage of 10 to 25 volts to said surface.

However, the invention as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made because one skilled in the art

would have been motivated to have modified the method of Korte by conducting prior to said anodizing step, immersing said surface to be anodized in an aqueous acid solution at a temperature below about 100°F, said solution comprising one or more mineral acids selected from the group consisting of, by weight, ten to twenty percent sulfuric acid, then to thirty percent nitric acid, and forty to eighty percent phosphoric acid until the magnesium content in said surface is reduced to less than three percent and to produce a glossy surface; and further comprising, during said immersing step, establishing said surface as an anode in a direct current circuit with said solution as an electrolyte and applying a direct current voltage of 10 to 25 volts to said surface because immersing the surface to be anodized in an aqueous acid solution at a temperature below about 100°F (= 90°-150°F), said solution comprising ten to twenty percent sulfuric acid (= 8-15 vol%) and forty to eighty percent phosphoric acid (= 50-70 vol%) and establishing said surface as an anode in a direct current circuit with said solution as an electrolyte and applying a direct current voltage of 10 to 25 volts (= between 5 and 50 volts) to said surface is a known surface treatment (electropolishing) for aluminum alloy as taught by Askin (col. 2, line 52 to col. 3, line 16). One would have electropolished an aluminum alloy article to produce a bright (= glossy) surface which would have naturally reduced the magnesium content in said surface.

As to less than three percent, limiting the Mg content to 2.0 to 8.0% magnesium is effective in improving superplastic forming behavior by promoting dynamic

recrystallization. It is also effective in improving the strength and superplasticity of aluminum alloy materials both before and after anodization without adversely affecting the corrosion resistance and weldability thereof as taught by Komatsubara (col. 3, lines 41-56).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edna Wong whose telephone number is (703) 308-3818. The examiner can normally be reached on Mon-Fri 7:30 am to 5:00 pm, alt. Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on (703) 308-3322. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 873-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1495.

Edna Wong

Edna Wong
Primary Examiner
Art Unit 1753

EW
March 11, 2003